MARKED UP VERSION OF THE AMENDED CLAIMS

(Version with marking to show changes made)

1. (currently amended) Safety device for limiting of current and voltage of an electrical consumer connected downstream to the safety device with at least one input connector and one output connector as well as input connector and output connector of a common line wherein the safety device includes at least one voltage and current limiting device and comprising at least one protective device ~~as a fusible fuse~~, a voltage limiter device referenced to the common line, a current limiter device connected to the output of the voltage limiter device as well as a protective circuit, which protective circuit is disposed upstream at the voltage and current limiting device, wherein the protective circuit includes a field effect transistor as a switching and regulating transistor, wherein the source drain leg of the field effect transistor is disposed between the input connector and the voltage and current limiting device and

wherein a gate of the switching and regulating transistor is connected to the common line through a control voltage feeding resistor for feeding in a control voltage of the field effect transistor, wherein a second transistor is connected to the input connector and to the gate of the switching and regulating transistor, wherein the collector of the second transistor is connected to the gate of the switching and regulating transistor for influencing the control voltage of the switching and regulating transistor, and wherein a feedback voltage is fed back to the base of the second transistor over a feedback resistor from an output of the protective circuit,

wherein a voltage sensor circuit is disposed between the base of the second transistor and the common line for voltage detection.

2. (previously presented) Safety device according to claim 1 characterized in that a series resistor operates as a current sensor and the voltage sensor circuit are present simultaneously both for voltage detection as well as for current limitation.

3. (previously presented) Safety device according to claim 1 or 2 characterized in that the voltage sensor circuit comprises a sensor diode and a sensor resistor connected in series.

4. (previously presented) Safety device according to claim 1 characterized in that the feedback current is adjusted by way of the feedback resistor such that in case of overload there results a regulating down of the load current to a minimum value and a switching off of the current in the voltage and current limiting device is performed only upon application of a supply voltage larger than an input nominal voltage and wherein an automatic switching on again is
given upon following lowering of the supply voltage to the input
nominal voltage.

5. (previously presented) Safety device according to claim 1 characterized in that a feedback current reducing resistor is disposed

between the base of the second transistor and a source of the switching and regulating transistor for reducing the feedback current.

6. (previously presented) Safety device according to claim 1 or 2, characterized in that the feedback voltage of the feedback resistor is tappable both immediately after a drain of the switching and regulating transistor as well as at any arbitrary circuit point of a current path between line points and that the feedback voltage of the feedback resistor is fed back to the base of the second transistor.

7. (previously presented) Safety device according to claim 1 or 2 characterized in that a protection Zener diode is disposed between the gate and the source of the switching and regulating transistor parallel to the gate and to a source of the switching and regulating transistor for protecting the gate source leg.

8. (previously presented) Safety device according to claim 1 characterized in that a gate control Zener diode is connected in series with the control voltage feeding resistor for reducing the gate control voltage of the switching and regulating transistor.

9. (currently amended) Safety device according to claim 7 characterized in that [[a]] <u>the</u> protection Zener diode and a gate control Zener diode are integral components of the switching and regulating transistor.

10. (previously presented) Safety device according to claim 1 characterized in that the feedback resistor is replaced by a control circuit for adjusting the feedback current independent of the output voltage and of the supply voltage.

11. (previously presented) Safety device according to claim 10 characterized in that the control circuit is a constant current circuit.

12. (previously presented) Safety device according to claim 1 or 2 characterized in that the safety device includes a reset device for switching on again in the protective circuit after triggering of a switching off of a current in the voltage and current limiting device.

13. (previously presented) Safety device according to claim 1 characterized in that the second transistor is a field effect transistor.

14. (previously presented) Safety device according to claim 1 characterized in that a bipolar transistor is employed as the switching and regulating transistor.

15. (previously presented) A method for limiting of current and voltage of an electrical consumer involving a safety device comprising the steps: furnishing the safety device with at least a voltage and current limiting device and with at least one protective device as a fusible fuse, with a voltage limiter device referenced to a common line, with a current limiter device connected to the output of the voltage limiter device as well as with

a protective circuit, which protective circuit is disposed upstream the voltage and current limiting device, wherein the protective circuit exhibits a field effect transistor as a switching and regulating transistor, wherein the source drain leg of the switching and regulating transistor is disposed between an input connector and the voltage and current limiting device;

connecting a gate of the switching and regulating transistor to a common line through á control voltage feeding resistor;

connecting a second transistor to the input connector and to the gate of the switching and regulating transistor, wherein a collector of the second transistor is connected to a gate of the switching and regulating transistor for influencing a control voltage of the switching and regulating transistor, and

disposing a voltage sensor circuit between a base of the second transistor and the common line for voltage detection;

connecting an electrical consumer downstream to the safety device with at least one input connector and one output connector as well as input connector and output connector of the common line;

feeding in the control voltage of the switching and regulating transistor from the gate to the common line through the control voltage feeding resistor;

feeding a feedback voltage back to the base of the second transistor over a feedback resistor from an output of the protective circuit.

16. (currently amended) A safety barrier for limiting the current and voltage of an electric consumer connected [[after]] downstream of the safety barrier, said safety barrier having at least one input connection and one output connection as well as input and output connections of a shared line, whereby the safety barrier has at least one voltage and current limiter comprising at least one fuse, a voltage limiter linked to the shared line, a current limiter connected to the output of said voltage limiter as well as [[an]] a ~~additional~~ protective circuit, which is arranged ~~before~~ upstream of the voltage and current limiter,

characterized in that

the additional protective circuit has a field effect transistor as a switching ~~and/or~~ and regulating transistor whose source-drain link is arranged between the input connection and the voltage and current limiter, and [[the]] a gate of the switching ~~and/or~~ and regulating transistor, for feeding a control voltage of the switching ~~and/or~~ and regulating transistor, is connected [[via]] through a control voltage feeding resistor to the shared line,

wherein a second transistor is connected to the input connection and to the gate of the switching ~~and/or~~ and regulating transistor,

wherein a collector of the second transistor, in order to influence the control voltage of the switching ~~and/or~~ and regulating transistor, is connected to the gate ~~thereof~~ of the switching and regulating transistor, and the feedback voltage [[after]] downstream of the switching ~~and/or~~ or regulating transistor ~~after its~~ and downstream of a drain of the switching and regulating transistor is fed back between [[the]] outputs of the additional protective circuit [[via]] through a feedback resistor to a base of the second transistor, wherein for purposes of voltage detection, there is a voltage sensing circuit arranged between the base of the second transistor and the shared line

~~or~~

~~for purposes of current detection, there is a series resistor arranged between the input connection and a source of the switching and/or or regulating transistor as a current sensor~~.

17. (currently amended) The safety barrier according to Claim 16, characterized in that,

~~pertaining to the additional protective circuit, concurrently for voltage detection as well as for current limitation,~~ the series resistor is present in the form of a current sensor and the voltage sensing circuit is present in the

form of a voltage detector concurrently for voltage detection as well as for current limitation pertaining to the protective circuit.

18. (currently amended) The safety barrier according to Claim 16, characterized in that

the voltage sensing circuit comprises a sensor Zener diode or trigger diode and a sensor resistor, which are connected in series.

19. (currently amended) The safety barrier according to Claim 16, characterized in that

a feedback current is set by means of the feedback resistor or by means of the switching [[or]] and regulating transistor ~~circuit~~ in such a way that, in case of overload, a load current is cut back to a minimum value and only after an application of a supply voltage, that is greater than a rated input voltage, is the load current switched off in the voltage and current limiter and autonomously switched back on at the time of the subsequent lowering of the supply voltage to the rated input voltage.

20. (currently amended) The safety barrier according to Claim 16, characterized in that,

in order to reduce [[the]] a feedback current in the ~~additional~~ protective circuit, a feedback current reducing resistor is installed between the base of the second transistor and the source of the switching and regulating transistor.

21. (currently amended) The safety barrier according to Claim 16, characterized in that [[the]] a reference voltage or a feedback voltage of the feedback resistor can be tapped directly [[after]] downstream of the drain of the switching ~~and/or~~ and regulating transistor as well as at any desired circuit point of the current path through the voltage and current limiter, and is fed back to the base of the second transistor.

22. (currently amended) The safety barrier according to [[Class]] claim 16, characterized in that, parallel to the gate and the source of the switching ~~and/or~~ and regulating transistor, a protection Zener diode is applied between said gate and the source in order to protect the gate-source link.

23. (currently amended) The safety barrier according to [[Class]] claim 16, characterized in that, in order to reduce a gate drive voltage of the switching

~~and/or~~ and regulating transistor, a gate control Zener diode is connected to the control voltage feeding resistor.

24. (currently amended) The safety barrier according to Claim 22, characterized in that

[[a]] the protection Zener diode ~~and/or~~ and a gate control Zener diode are integral components of the switching ~~and/or~~ and regulating transistor.

25. (currently amended) [[The]] A safety barrier ~~according to Claim 16,~~ for limiting the current and voltage of an electric consumer connected downstream of the safety barrier, said safety barrier having at least one input connection and one output connection as well as input and output connections of a shared line~~,~~ whereby the safety barrier has at least one voltage and current limiter comprising at least one fuse, a voltage limiter linked to the shared line, a current limiter connected to the output of said voltage limiter as well as a protective circuit, which is arranged upstream of the voltage and current limiter,

characterized in that,

the protective circuit has a field effect transistor as a switching and regulating transistor whose source-drain link is arranged between the input

connection and the voltage and current limiter, and a gate of the switching and regulating transistor, for feeding a control voltage of the switching and regulating transistor, is connected through a control voltage feeding resistor to the shared line,

wherein a second transistor is connected to the input connection and to the gate of the switching and regulating transistor,

wherein a collector of the second transistor, in order to influence the control voltage of the switching and regulating transistor, is connected to the gate of the switching and regulating transistor, and the feedback voltage downstream of the switching and regulating transistor and downstream of a drain of the switching and regulating transistor is fed back between outputs of the protective circuit through

a switching and regulating circuit,

in order to set a feedback current, irrespective of an output or supply voltage, ~~the feedback resistor is replaced by a switching or regulating circuit~~

to a base of the second transistor, wherein for purposes of voltage detection, there is a voltage sensing circuit arranged between the base of the second transistor and the shared line.

26. (previously presented) The safety barrier according to Claim 25, characterized in that

the switching or regulating circuit is a constant current circuit.

27. (previously presented) The safety barrier according to Claim 16, characterized in that

said safety barrier has a reset means for switching the additional protective circuit back on after a load current has been switched off in the voltage and current limiter.

28. (previously presented) The safety barrier according to Claim 16, characterized in that

the second transistor is an electronic relay or field effect transistor or thyristor.

29. (currently amended) [[The]] A safety barrier ~~according to Claim 16,~~ for limiting the current and voltage of an electric consumer connected downstream of the safety barrier, said safety barrier having at least one input connection and one output connection as well as input and output connections of a shared line, whereby the safety barrier has at least one

voltage and current limiter comprising at least one fuse, a voltage limiter linked to the shared line, a current limiter connected to the output of said voltage limiter as well as a protective circuit, which is arranged upstream of the voltage and current limiter,

characterized in that

the protective circuit has a bipolar transistor or electronic relay ~~is used instead of the field effect transistor~~

. as a switching and regulating transistor whose source-drain link is arranged between the input connection and the voltage and current limiter, and a gate of the switching or regulating transistor, for feeding a control voltage of the switching and regulating transistor, is connected through a control voltage feeding resistor to the shared line,

wherein a second transistor is connected to the input connection and to the gate of the switching and regulating transistor,

wherein a collector of the second transistor, in order to influence the control voltage of the switching and regulating transistor, is connected to the gate of the switching and regulating transistor, and the feedback voltage downstream of the switching and regulating transistor and downstream of a drain of the switching and regulating transistor is fed back between outputs of the additional protective circuit through

a feedback resistor to a base of the second transistor, wherein for purposes of current detection, there is a series resistor arranged between the input connection and a source of the switching and regulating transistor as a current sensor.

30. (currently amended) Electrical protective circuit for limiting of current and voltage for protecting an electrical consumer, with at least one input connection and an output connection as well as input connection and output connection of a common line~~,~~

wherein a voltage and current limiting device is disposed within [[the]] an electrical protective circuit, wherein the voltage and current limiting device includes a field effect transistor as a switching ~~and/or~~ and regulating transistor characterized in that

a source-drain-leg of the switching ~~and/or~~ and regulating transistor is disposed between [[an]] the input ~~connector~~ connection and [[an]] the output ~~connector~~ connection and a gate of the switching ~~and/or~~ and regulating transistor is connected to the common line through a resistor for feeding in a control voltage of the switching ~~and/or~~ and regulating transistor and wherein a second transistor is connected to the input ~~connector~~ connection and to the gate of the switching ~~and/or~~ and

regulating transistor, wherein a collector of the second transistor is connected to the gate of the switching ~~and/or~~ and regulating transistor for influencing a control voltage of the switching ~~and/or~~ and regulating transistor and wherein the output voltage [[after]] downstream of the source-drain-leg of the switching ~~and/or~~ and regulating transistor is fed back at the output ~~connector~~ connection to a base of the second transistor through a feedback resistor, wherein a sensor Zener diode is disposed between the base of the second transistor and the common line

~~or~~

~~a series resistor is disposed as a current sensor between the input connector and a source of the switching and/or regulating transistor for current capturing~~.

31. (currently amended) Electrical protective circuit for limiting of current and voltage for protecting an electrical consumer, with at least one input ~~connection~~ connector and an output ~~connection~~ connector as well as input ~~connection~~ connector and output ~~connection~~ of a common line, wherein a voltage and current limiting device is disposed within the

protective circuit, wherein the voltage and current limiting device includes a field effect transistor as a switching ~~and/or~~ and regulating transistor characterized in that

a source-drain-leg of the switching ~~and/or~~ and regulating transistor is disposed between the input connector and the output connector and a gate of the switching ~~and/or~~ and regulating transistor is connected to the common line through a control voltage feeding resistor for feeding in a control voltage of the switching ~~and/or~~ and regulating transistor and wherein a second transistor is connected to the input connector and to the gate of the switching ~~and/or~~ and regulating transistor, wherein [[the]] a collector of the second transistor is connected to the gate of the switching ~~and/or~~ and regulating transistor for influencing the control voltage of the switching ~~and/or~~ and regulating transistor and wherein an output voltage after the source-drain-leg of the switching ~~and/or~~ and regulating transistor is fed back at the output connector to a base of the second transistor through a feedback resistor, wherein a sensor Zener diode is disposed between the base of the second transistor and the common line.

32. (currently amended) Electrical protective circuit for limiting of current and voltage and for protecting an electrical consumer, with at least one

input connection and an output connection as well as input connection and output connection of a common line, wherein a voltage and current limiting device is disposed within the protective circuit, wherein the voltage and current limiting device includes a field effect transistor as a switching ~~and/or~~ and regulating transistor characterized in that

a series resistor is disposed as a current sensor between the input ~~connector~~ connection and a source of the switching ~~and/or~~ and regulating transistor for current capturing.

REMARKS

Claims 1 through 32 continue to be in the case.

Claims 1, 9, 16 to 25 and 29 to 32 are being amended.

1. The proposed drawing correction filed on December 22, 2003 has been approved.

Proper corrected drawings are required in reply to the Office action to avoid abandonment of the application. The correction to the drawings will not be held in abeyance.

Appartently the drawing corrections are approved and no further corrections appear to be needed. If further corrections should become necessary, applicant will make such further needed drawing corrections.

2. Claims 16-32 stand objected to as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Newly submitted claims 16-32 are vague and confusing because they are replete with the same exact errors ("additional", "and/or", "or", and "instead") that the examiner identified in the originally filed claims 1-14. Similar corrections that applicant made to claims 1-14 are now also required to claims 16-32 as agreed during the February 4, 2003 telephone conversation

Appropriate correction of all of the above is required.

The present amendment is intended to make the corrections kindly pointed out by the Examiner and to place the claims into allowable form. The claims 16 to 29 represented a direct translation of claims found allowable by the European patent office, and which had inadvertently been presented in their original form and without the corrections kindly pointed out by the Examiner.

3. Claims 16-32 would be allowable if rewritten or amended to overcome the objection set forth above in this Office action.

Applicant very much appreciates the indication of allowable subject matter in claims 16 through 32 and the applicant has made amendments to bring claims 16 through 32 into fully allowable form..

4. Claims 1-15 are allowed.

The allowability of claims 1 through 15 is gratefully acknowledged by the applicant.

The amendments to the claims are being made to further clarify the claim language.

Reconsideration of all outstanding rejections is respectfully requested.

All claims as presently submitted are deemed to be in form for allowance and an early notice of allowance is earnestly solicited.

Respectfully submitted,

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